

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

# PCT

To:

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24 FEB. 2004

## NOTIFICATION OF RECEIPT OF DEMAND BY COMPETENT INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

(PCT Rules 59.3(e) and 61.1(b), first sentence  
and Administrative Instructions, Section 601(a))

Date of mailing  
(day/month/year)

19-02-2004

Applicant's or agent's file reference

NdP 86647

### IMPORTANT NOTIFICATION

International application No.

PCT/EP03/08950

International filing date (day/month/year)

11/08/2003

Priority date (day/month/year)

09/08/2002

Applicant

NAUTILUS S.r.l. et al.

1. The applicant is hereby **notified** that this International Preliminary Examining Authority considers the following date as the date of receipt of the demand for international preliminary examination of the international application:

05/02/2004

2. This date of receipt is:



the actual date of receipt of the demand by this Authority (Rule 61.1(b)).



the actual date of receipt of the demand on behalf of this Authority (Rule 59.3(e)).



the date on which this Authority has, in response to the invitation to correct defects in the demand (Form PCT/IPEA/404), received the required corrections.

3. ☐ **ATTENTION:** That date of receipt is **after** the expiration of 19 months from the priority date. Consequently, in respect of some Offices, the demand does not have the effect of postponing the entry into the national phase until 30 months from the priority date (or later in some Offices) (Article 39(1)) and the acts for entry into the national phase must therefore be performed within 20 months from the priority date (or later in some Offices). **However**, in respect of some other Offices, the time limit of 30 months (or later) may nevertheless apply. See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.



(If applicable) This notification confirms the information given by telephone, facsimile transmission or in person on:

4. Only where paragraph 3 applies, a copy of this notification has been sent to the International Bureau.

Name and mailing address of the IPEA/

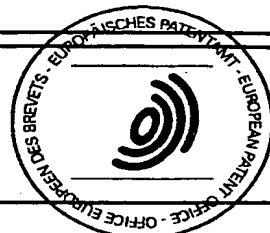


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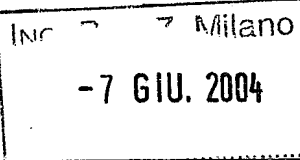
PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

To:

Coppo, Alessandro  
BARZANO & ZANARDO MILANO S.p.A.  
Via Borgonuovo, 10  
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Date of mailing  
(day/month/year) 04.06.2004

Applicant's or agent's file reference  
NdP 86647

IMPORTANT NOTIFICATION

International application No.  
PCT/EP 03/08950

International filing date (day/month/year)  
11.08.2003

Priority date (day/month/year)  
09.08.2002

Applicant  
NAUTILUS S.r.l. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

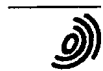
The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international preliminary examining authority:



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## PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference NdP 86647	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/08950	International filing date (day/month/year) 11.08.2003	Priority date (day/month/year) 09.08.2002
International Patent Classification (IPC) or both national classification and IPC B64B1/02		
Applicant NAUTILUS S.r.l. et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 2 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"><li>I <input checked="" type="checkbox"/> Basis of the opinion</li><li>II <input type="checkbox"/> Priority</li><li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li><li>IV <input type="checkbox"/> Lack of unity of invention</li><li>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li><li>VI <input type="checkbox"/> Certain documents cited</li><li>VII <input type="checkbox"/> Certain defects in the international application</li><li>VIII <input type="checkbox"/> Certain observations on the international application</li></ul>		
Date of submission of the demand  05.02.2004	Date of completion of this report  04.06.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Pedersen, K  Telephone No. +49 89 2399-2874 	

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP 03/08950

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-17 as originally filed

**Claims, Numbers**

4 (part), 5-12 as originally filed

1-3, 4 (part) received on 25.05.2004 with letter of 24.04.2004

**Drawings, Sheets**

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/EP 03/08950**

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-11
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-11
Industrial applicability (IA)	Yes: Claims	1-11
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Point V, 2**

1. Cited documents (D):

D1: EP-A-0 583 666  
D2: US-A-5 240 206  
D3: WO-A-89 10868  
D4: FR-A-2 612 878

2. Independent claim 1:

2.1 In the wording of claim 1 the document D1 discloses:

A highly manoeuvrable (relative expression which does not impart any particular limitations) aircraft with aerostatic lift (cf. e.g. the abstract), comprising a structure which includes at least two non-rigid spindle shaped elements (2) side by side, joined by at least one connecting element (1, 3), said aircraft also being provided with a movement and control system with a set of several motors, of which at least one is adjustable with rotation around an axis perpendicular to the rotation axis of said motor (cf. Figs. 3 and 4), each of which drives a propeller with fixed (assumed to be the case since no mention is made of variable pitch) pitch.

The subject-matter of claim 1 therefore differs from this known aircraft in that

- (a) the motors are electric motors (D1 does not disclose which type of motor is used, and in that
- (b) at least one (of this) propeller is mounted on [a] vertical arm extending from the connecting element, disposed at a distance from the whole body centre of gravity.

2.2 These distinguishing features give rise to two - unrelated - objective problems:

- choosing a motor type for the aircraft (from feature (a)), and
- increasing manoeuvrability in the hover (from feature (b)); the location of the propellers in the aircraft of D1 is such that they do not permit pitch changes, cf. e.g. col. 7, l. 15-29).

2.3 Choosing electric motors for the airship would be a normal design measure for the skilled person in order to solve the first problem, such motors being well known for this purpose and particularly suitable for the gimballed mounting shown in Figures 3 and 4. This also applies to the optional use of variable pitch propellers mentioned in claim 1.

2.4 Essentially contrary to the Applicant's assertions in the letter of 24.05.2004, the document D2 teaches the mounting of propellers on arms in a similar aircraft away from the center of gravity and the buoyancy center (comparable to the center of lift in aircraft relying on aerodynamical lift) in order to obtain control by means of these propellers about all (pitch, yaw and roll) axes; cf. D2, col. 4, l. 63 to col. 5, l. 17.

With the location of the propellers in D1 being such that only the provision of a moment arm about the lateral axis is required to obtain control about the remaining axis (i.e. pitch) to thereby solve the second of the above-mentioned problems, it would be an obvious design measure for the skilled person on the basis of the teaching of D2 to provide the aircraft of D1 with the above-mentioned feature (b).

2.5 The subject-matter of claim 1 does therefore not involve an inventive step (Article 33(1) and (3) PCT).

3. Dependent claims 2-12:

3.1 Control (manual or radio-controlled) of an airship without deflecting aerodynamic control surfaces, in the sense of claim 2, is known and follows without exercising an inventive step from D2.

3.2 The additional features of claim 3 are also known from D1.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/EP03/08950

- 3.3 The additional features of claims 4-8 are known and follow without exercising an inventive step from D3.
- 3.4 The additional features of claims 9-11 are known and follow without exercising an inventive step from D4.

**Further Observations**

1. Dependent claim 6 should refer to claim 5, not claim 4 (Article 6 PCT).
2. Claim 1 is not drafted in the two part form (Rule 6.3(b) PCT) with the preamble based on the disclosure of D1.
3. The documents D1 and D2 are not acknowledged in the description, which is also not consistent with the amended claim 1 (Rule 5.1(a)(ii) and (iii) PCT).



CLAIMS

1. Highly manoeuvrable aircraft with aerostatic lift, characterised in that it comprises a structure, which includes at least two non-rigid spindle-shaped elements side by side (11), joined by at least one  
5 connecting element (12), said aircraft also being provided with a movement and control system with a set of several electric motors, of which at least one is adjustable with rotation around an axis perpendicular  
10 to the rotation axis of said motor, each of which drives a propeller (13) with fixed or variable pitch, <—>.

2. Aircraft with aerostatic lift as in claim 1, characterised in that it consists of an airship (10), which can be piloted or radio-controlled, without  
15 deflecting aerodynamic control surfaces and sustained by helium.

3. Aircraft with aerostatic lift as in claim 1, characterised in that it comprises pressurised structural elements appropriately assembled inside said  
20 connecting element (12) between the two spindle-shaped elements (11).

4. Aircraft with aerostatic lift as in claim 1, characterised in that said control system is fly-by-wire and completely automatic, according to which

New page 18a

< at least one of this propeller (13) is mounted on  
5 vertical arm (14) extending from the connecting element  
(12), disposed at a distance from the whole body centre  
of gravity. >

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